



ACTON PUBLIC SCHOOLS ♦ ACTON-BOXBOROUGH REGIONAL SCHOOL DISTRICT

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GREEN COMMUNITY GRANT FINAL REPORT

Date of Final Report Submission: February 20, 2015

Name and Title of Person Submitting Final Report: Kate Crosby, Energy Manager, ABRSD

- I. **Descriptive narrative:** The Acton-Boxborough Regional School District (ABRSD) managed and implemented four energy efficiency projects that were awarded Green Communities grant funding on July 14, 2014. All four projects were managed by JD Head, Director of Facilities and Transportation, and Kate Crosby, Energy Manager. Kate Crosby carried responsibility for day to day administration of the projects. All other aspects of the projects were managed flexibly as needed. The 4 projects were as follows:

a. **Replace & upgrade boilers** (Location: RJ Grey JHS)

- i. Procurement: Please see “ABRSD.Procurement memo boilers 9.19.14.pdf” in the zip file labeled “ABRSD.Procurement & Funds expended.zip” for information on boilers procurement.
- ii. Timeline

BOILERS	
July, 2014	Green Communities grant funding awarded
August, 2014	Removal of existing boiler sections
Sept, 2014	Delivery of new condensing boilers
Sept/Oct, 2014	Installation of new condensing boilers

b. **Tie exhaust fans to Energy Mgt. System** (Location: RJ Grey JHS)

- i. Procurement: Project procured under Section 14 of M.G.L., Ch. 25A.
- ii. Timeline

EXHAUST FANS	
July, 2014	Green Communities grant funding awarded
Sept, 2014	Communication cables run, programming updates begun
October-Dec, 2014	Programming & troubleshooting continues
January, 2014	Programming finished, staff training provided

c. **Upgrade exterior lighting to LED** (Location: grounds of Conant ES, Douglas ES, Gates ES, Acton-Boxborough Regional High School (ABRHS))

i. Procurement: Project procured under Section 14 of M.G.L., Ch. 25A.

ii. Timeline

LED EXTERIOR LIGHTING	
July, 2014	Green Communities grant funding awarded
Nov, Dec, Jan 2015	Removal of existing fixtures, installation of LED fixtures

d. **Circuit-level metering and Energy Mgt. System data analysis** (Location: RJ Grey JHS, ABRHS)

i. Procurement: Project procured under Section 14 of M.G.L., Ch. 25A.

ii. Utility incentives are being pursued through the Pay for Performance (P4P) program. See zip file (“ABRSD.P4P Documentation”) for P4P utility applications and P4P recommendations from Peregrine Energy Group.

iii. Timeline

CIRCUIT-LEVEL METERING & EMS DATA ANALYSIS	
Nov, 2014	Archiving software installed within EMS
Nov, Dec, 2014	Circuit-level metering equipment delivered & installed
Jan, Feb, 2015	Data analysis, development of recommendations
Feb, 2015	Pay 4 Performance applications submitted to utilities

II. Narrative re: public involvement & support, lessons learned, other energy-related programs and activities leveraged by the grant funding:

Information about these energy efficiency projects has been shared out with the public through Green Acton, the town’s Green Advisory Board, the School Committee, and across the K-12 school network. The largest level of public involvement is and will continue to be with the circuit-level metering project. For this project, student teams at the HS and the JH are actively involved in working with the data, and using that to create messaging to faculty and staff about opportunities for further energy savings through interventions such as turning off computers every evening. As an example, the high school team will be making a presentation to the entire HS faculty about energy efficiency as part of this project.

Lessons learned include the positive outcome that two of the four projects were able to garner larger utility incentives than originally anticipated. In the case of the exhaust fan

project, the utility incentive was higher by \$4,604 than expected, which allows us to turn back grant money in that amount. In the case of the boiler project, the larger incentive allowed the district to allocate additional staff hours of in-house labor in order to complete the project in the fall of 2014 rather than delaying till the spring of 2015.

Another important learning experience has been working with the circuit-level metering project. The technology is new to us, so there is much learning underway about how to best install it and how to effectively interpret the data it yields. In addition, the high school “Resource Force” student team has been having vigorous discussions about how to best use the equipment and data to highlight savings opportunities for faculty and staff, and plans to continue experimenting with the educational potential over the months ahead and into next year. The student team at the JH also has planning underway about how to best engage faculty and staff through the exciting data the project yields.

The circuit-level metering project has helped provide leverage in looking at other possible applications for the technology. There are active discussions underway with a utility about potentially using another set of this equipment at a third school to set up a study as part of building an understanding of how to create and evaluate behavior-based programs, particularly in K-12 settings.

- III. Photos: Photos are included in zip file labeled “ABRSD.Photos.zip”
- IV. Invoices: Invoices are included in zip file labeled “ABRSD.Invoices.zip”
- V. Documentation of funds expended: Scans of checks documenting expended funds are included in zip file labeled “ABRSD.Procurement & Funds expended.zip”.
- VI. Updated “GC Grant Final Table.xls” was emailed to Jane Pfister on February 13, 2015 (with combined data from ABRSD and Town of Acton).
- VII. Contact person:

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